Watershed Group Effectiveness: A Case Study of the Friends of Big Walnut Creek

Introduction:

Defining success for environmental management is a topic social scientists have been trying to solve for years. Defining success is difficult because it is often based on the management practice in question. These management practices vary between command and control policies, to collaborative efforts between stakeholders of a given natural resource. This paper examines the effectiveness of a user monitoring group, a local watershed group commonly referred to as, The Friends of Big Walnut Creek, located in Columbus Ohio.

A user monitoring group is a collection of private citizens committed to monitoring a natural resource. The natural resource can vary from a local forest, wetland, or in this case study, a watershed. Although the individuals of this group are not part of a professional environmental organization, their monitoring efforts of local natural resources are often vital for effective environmental management. For environmental management to be effective, it must address the issues of all the stakeholders that have access, or use, natural resources.

Stakeholders can include, but are not limited to, local citizens, governmental institutions, private companies, and NGOs (non-governmental organizations). Because of competing interests, it is often difficult to create a consensus with regard to an environmental problem. On the other hand, collaborative decision making can be a viable policy option for governmental institutions tasked with enforcing existing environmental regulations. Due to the potential existing actors (stakeholders) involved with natural resources, creating avenues where these

interests can interact may lead to a more viable environmental solution for all of the parties involved. This process, however, is not a panacea as the diverse array of stakeholders is often not included in the decision making process (Scheuler, 1996). According the Scheuler, narrow special interest groups often dominate the decision making process, leaving the majority of stakeholders out of the conversation. This concern is evident in this case study since the Friends of Big Walnut want a larger role in influencing environmental decisions that affect their watershed.

Background on US Collaborative Environmental Policy

The United States Government has not always sought out public opinion to help aid decisions made by public agencies tasked with enforcing laws enacted by Congress. As federal bureaucracies began to grow in power and size, concern grew for more public involvement with governmental decisions (Koontz, Steelman, Carmin, Korfmacher, Moseley & Thomas, 2004). These concerns led to the enactment of legislation that would forever change public participation in policy decisions in the United States. The Administrative Procedure Act "APA" was enacted in 1946, creating the procedures and processes federal agencies must follow in developing and implementing, and promulgating regulations ("Summary of the,"). For example, as a result of the enactment of the APA, Federal agencies were required to publish their decisions in the *Federal Register* and hold public hearings for certain decisions (Koontz, Steelman, Carmin, Korfmacher, Moseley & Thomas, 2004). Unfortunately, this did not lead widespread public participation. Many times, narrow special interest groups that had a vested interest in the decision of the agency were the only participating parties.

This paradigm began to shift with the rise of citizen participation in the Federal legislative process in the 1960s and culminating with the enactment of landmark environmental

legislation during the 1970s. One of the more important pieces of legislation was the National Environmental Policy Act ("NEPA"). Unlike many environmental statutes, NEPA provided that any Federal agency found to be making decisions that have a significant impact on "the human environment" were required by law to set forth create environmental impact statements, or an EIS. Environmental impact statements were also required to have some form of public participation. Usually, this meant that an agency had to release a draft EIS for a public comment period. Following NEPA, a bevy of environmental legislation was enacted by Congress similarly calling or mandating for public participation. Such legislation included the Clean Water Act, Clean Air Act, Endangered Species Act, and the Safe Drinking Water Act.

Although there was an explosion in environmental legislation during this time, there was ample criticism these laws did not go far enough, or actually allow the public to influence governmental decisions (Koontz, Steelman, Carmin, Korfmacher, Moseley & Thomas, 2004). As formal public participation declined, grassroots organizations spread throughout the nation which led to governmental institutions of all levels to try and shift to a more collaborative approach for environmental management. This is especially true with the main focus of this case study, local watersheds.

Early water quality laws in the United States usually delegated water pollution control to the States which changed with increasing concerns over water pollution. The primary concern in The United States with water pollution used to be point source pollution, or pollution that is coming from a fixed location (Migliaccio, Li & Obreza, 2012). As concern grew over water quality issues, the Federal government would become increasingly involved in water quality issues in the late 1960s and 1970s, but the focus would remain with point source pollution. This posed a problem because non-point source pollution, or run off, poses the biggest threat to water

quality. Non-point source pollution poses the biggest threat to water quality because it comes from a multitude of areas. It is impossible to distinguish where exactly the pollution is coming from. The main culprits are primarily agriculture runoff, and run off from impervious surfaces. The problem lies with the fact it is much easier to regulate point source pollution rather than non-point pollution.

Non-point source pollution is generally harder to regulate than non-point source pollution because of agriculture and urban runoff which are both land use issues not regulated by the Environmental Protection Agency (Koontz, Steelman, Carmin, Korfmacher, Moseley & Thomas, 2004). As non-point source pollution has become a larger environmental issue, the environmental policy response has grown in scope as well. For example, the 1987 amendments to the Clean Water Act set in place the 319 Nonpoint Source Management Program which was a recognition by the Federal Government that they needed to have a more active role in non-point source water pollution ("Clean water act," 2012). Section 319 allows states to receive grant money to support a wide range of projects such as education programs, demonstration projects, technical assistance, and watershed actions plans. A watershed action plan is the type of collaborative environmental management strategy examined in this case study, as a 319 grant was issued to the Friends of Big Walnut. These grants, distributed by the Ohio Department of Natural Resources, permits local watershed group to evaluate the current conditions of their respective watersheds, and also to aid and assist management decisions in the future by state and Federal agencies. This case study follows the progression of increasing collaborative environmental management in the United States, focusing on the efforts of a local citizen based watershed group. Groups, such as these, may be a cost effective alternative for environmental monitoring projects:

> Locally-based monitoring appears to be consistently cheap relative to the costs of management and of professional monitoring…local schemes yield locally relevant results that can be as reliable as those derived from professional monitoring. (Danielsen, Burgess & Balmford, 2005 p.1.)

Because of current governmental budget constraints, citizen monitoring groups could be an important component of collaborative environmental management, which is why further research should be completed to discern what makes these groups successful.

As discussed below, the paper will analyze previous research on what makes a user monitoring groups successful. This case study defines success for these groups as either having tangible positive impacts for the physical environment, or increasing community awareness of the watershed through activities such as cleanups or educational events.

Background of The Friends of Big Walnut

The Lower Big Walnut Creek Watershed is located in central Ohio "draining the east side of Columbus. The watershed "is primarily in Delaware, Franklin and Morrow counties, and also includes small parts of Knox, Licking and Fairfield counties. Major streams included in the watershed are Big Walnut Creek, Alum Creek, Blacklick Creek, and Rocky Fork." ("Big walnut creek ,"). A map of the watershed can be found in **Figure 1**. The watershed encompasses parts of the City of Columbus, municipalities, and various suburbs of Columbus such as Gahanna. Columbus is the 15th largest city in the United States with a vibrant and growing economy ("Economy at a,"). Due to this growth, the Lower Big Walnut Creek watershed faces increasing pressure from urban growth. Non-point source pollution will only increase in the watershed with the increase in urban sprawl and development.

The Friends of Big Walnut is a watershed group located in central Ohio. Their goal is to "is to protect and restore Big Walnut Creek and Rocky Fork and Blacklick Tributaries for the mutual benefit of the human and natural communities and to enhance stewardship within the watershed through education, collaboration, monitoring, and community clean-up efforts." ("Friends of big,")The group also lists 9 other goals to improve the Lower Big Walnut Watershed on their site. The goals are listed in **Table 1.** The group was founded in the early 2000s with the support of MORPC (Mid Ohio Regional Planning Committee) and other agencies. Subsequently, the group received a 319 grant from the Ohio Department of Natural Resources to create a watershed action plan. The Friends of Big Walnut have also led creek cleanups and citizen education campaigns. Their main focus has been sediment control from construction sites, and threatening lawsuits against private entities found to be breaking environmental regulations.

The group is primarily comprised of 6-8 members who are all above the age of fifty. They have various career backgrounds such as a graphic designer, teacher, banker, and civil engineer. In the past, the main focus of the Friends of Big Walnut has been sediment erosion control from various construction sites. However, as membership began to diminish, the group tried to shift their focus to increasing group membership. Unfortunately, they have not been successful in this endeavor.

This case study endeavored to evaluate the effectiveness of the Friends of Big Walnut. As this case study progressed it became apparent the Friends of Big Walnut is a fading watershed group. They do not have the membership to continue. In order to be effective, they need to figure how to replenish their ranks, and because of this, this case study shifted its focus to figuring out the best way to increase participation in a local watershed group. This concept is tied to

effectiveness because with more members, watershed groups can have larger activities and grow awareness of the watershed among the communities surrounding the watershed. Two questions addressed in this case study are: if a group that is advocacy/confrontation based can grow their membership, or will they have to change their group focus in order to grow. Effectiveness is often a vague term in evaluating environmental improvements, but in this case it will be defined by the overall positive environmental impact that the group has had on the Lower Big Walnut Creek watershed. This includes not only environmental impacts, but social impacts, such as education opportunities for local citizens as well.

To further evaluate this issue, this case study attempts to determine what factors help the group with being effective not only with community participation, but tangible environmental benefits as well. Some examples of these factors are financial stability, relationships with governmental agencies, outreach efforts, and group dynamics. Finally, these factors will be analyzed with the information gathered in this study and prior research.

In order to determine what factors increase community participation in a watershed group, interviews were conducted with other watershed groups in the central Ohio area to serve as a comparative tool for the examination of the Friends of Big Walnut. Members from the Friends of the Lower Olentangy Watershed (FLOW) and the Friends of Alum Creek and Tributaries (FACT) were targeted due to their different group management styles. These groups, while not perfect, exhibit a greater degree of community participation than the Friends of Big Walnut. Investigating these two groups helped this case study draw conclusions on how the Friends of Big Walnut can improve participation in their group, or even how they can even be more effective in helping protect and restore the Lower Big Walnut Creek watershed.

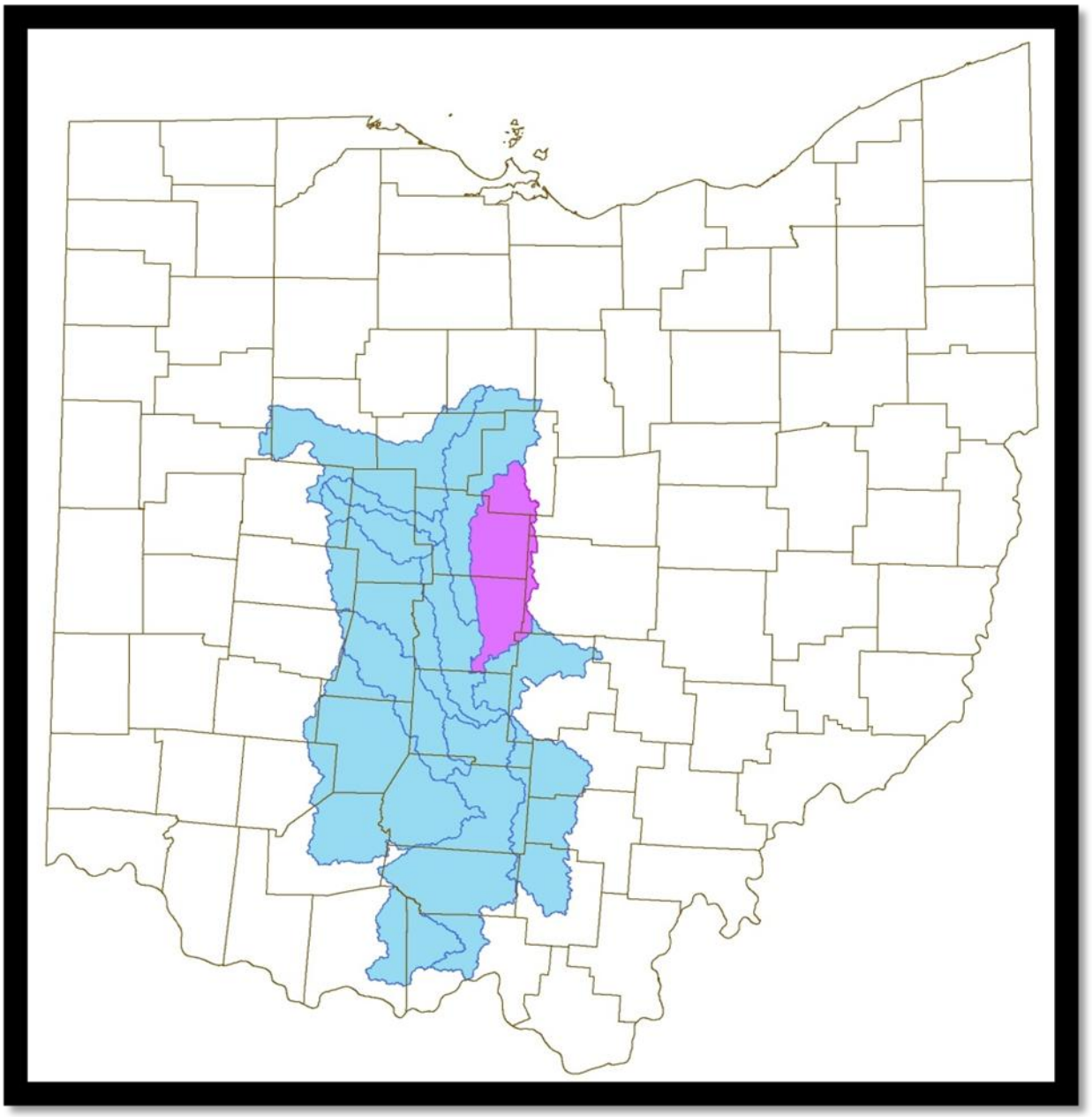

Figure 1-Lower Big Walnut Watershed
is purple/pink portion on map.
Retrieved from http://epa.ohio.gov/dsw/tmdl/SciotoRiver.aspx
Blue shaded area is the larger Scioto watershed

GOAL: To improve Lower Big Walnut Creek Watershed.

1. To preserve and protect Lower Big Walnut Creek, its tributaries and watershed, from Hoover Dam as the northern limit, to its termination at the confluence with the Scioto River to the south, for the benefit of the people and wildlife that use them.

2. To publicize the benefits of Big Walnut Creek as green space and a natural resource that is an ecosystem at risk because of its urban environment.

3. To exercise legal means of preservation and dedication of watershed areas through regulatory actions such as conservation easements and facilitating donations of land.

4. To advocate for the protection and preservation of natural ecosystems within Big Walnut Creek watershed, its banks, its floodplain, its tributaries, and their ephemeral streams.

5. To promote restoration activities for damaged or compromised areas of the Big Walnut Creek watershed.

6. To attain levels of aquatic life use graded as Exceptional Warm Water Habitat (EWH)and to maintain that level.

7. To insure that any habitat alterations occurring in the Watershed do not endanger the physical integrity of the ecosystem.

8. To organize, expand, and educate local community support for water quality enhancement.

9. To continue the pursuit of these goals into the foreseeable future.

(**Figure 1)** Retrieved from http://www.friendsofbigwalnutcreek.com/index.htm

Literature Analysis

User Group Objectives based Group Characteristics

In preparing this case study interviews of individuals from different watershed groups were conducted. Each group had a different set of objectives, based on the different make up of each group in question. Research on watershed groups with a large and diverse membership bases show that these groups are more likely to focus on planning, group development, and habitat restoration projects (Koontz & Johnson, 2004) Conversely, watershed groups with a smaller membership base are generally more inclined to put pressure on governmental institutions to further their policy agenda for the natural resource they are trying to protect. Different user groups may have a varying degree of governmental agency affiliation. The type of affiliation may dictate which group will be best suited to collaborative management. This is important because as Koontz and Johnson note, "These results suggest a more contextual approach to prescribing widespread stakeholder involvement in collaborative environmental management." (p. 198) Accordingly, although many believe that an increase of participation in user monitoring groups may lead to more positive environmental outcomes, group dynamics may play a bigger role. Unfortunately for some watershed groups, their members' dispositions, and their focus as a group may preclude them from being successful with a large membership base.

Factors that Make Collaborative Efforts Successful or Unsuccessful

Various factors can be identified to evaluate the effectiveness of a watershed group in achieving its mission. According to previous research, many factors may be out of the groups control like agency mentality (O'Leary & Raines, 2001) and public awareness of an issue (Duram & Brown, 1999) Also, although gaining participation is often a goal of these local user

monitoring groups, it takes effort to get people engaged in an issue such as watershed management, often requiring direct contact and solicitation (Duram & Brown, 1999). Research suggests the more narrow a focus for a problem, the more likely it will decrease participation and only leave individuals involved in a problem that are truly interested in it, or have a vested interest in the issue at hand (Chess, Hance & Gibson, 2000). Although the group desires a greater presence in the watershed, getting the right participation may be better than getting more participation.

Stakeholder/Volunteer Participation

The Friends of Big Walnut believe greater participation in their group activities will result in greater effectiveness. Quality may trump quantity in terms of community participation. As Chess states, "In watersheds where planning and management do not raise controversial issues, less participation may be the right participation." (Chess, Hance & Gibson, 2000 p.250). This is not to say that watershed groups should not strive for increasing citizen participation, they just have to understand the obstacles in front of them. This is because getting the right participation is vital in developing effective watershed plans, if participants do not have an incentive to work with one another, then effective cooperation is unlikely (Pinkerton, 1994). It may be difficult to activate citizens to a topic that is not a pressing concern on their agenda. One of these obstacles is a lack of environmental knowledge, but other issues remain as well that impede participation in an environmental related group. For one, the group must deal with issues in how people make decisions, risk perception, and how people use mental heuristics. An example of this can be seen in a study describing how the public views climate change (Weber and Stern 2011). The authors list a plethora of reasons why there is a gap in understanding climate change, which range from mental short cuts, affective decision making versus analytic

decision making, incorrect mental models, and issue framing (Weber & Stern, 2011). Although this is not a direct correlation to the watershed issues, it highlights the Friends of Big Walnut's challenge. In order to encourage citizens to change their behavior to be either more involved in their group, or be more environmentally conscious of the watershed, a variety of barriers must be overcome. Attempting to change public behavior on a topic the general public does not have a good understanding of could be challenging, social scientists are still trying to figure out how to change human behavior to be more sustainable.

Although stakeholder participation is important for collaborative environmental management, local watershed groups, such as the Friends of Big Walnut, need a specific type of participation, volunteers. Fortunately, volunteers are abundant in the United States, with around half the population of the country participating in a volunteer activity of some kind (Hodgkinson & Weitzman, 1990) (Cnan & Cascio, 1999). Currently, the group is down to around 6-8 members and its fear is that the group will cease to exist. Unfortunately, the group is somewhat lost on how to increase membership. Previous literature on volunteer participation has indicated that there is a debate among current scholars on what motivates volunteering. There are those that believe volunteering is a result of cognitive factors such as values, and those that believe volunteering is influenced by social factors (Hauser, Koontz & Bruskotter, 2011). The most promising research on activating volunteerism in citizens focuses on social connections and interactions, less emphasis has been placed on demographic factors such as income or education level (Hauser, Koontz & Bruskotter, 2011). It must be noted that there has been prior research indicating that demographics, such as age, may influence volunteer participation (Smith, 1994). Volunteers must also feel appreciated by the group they are involved with, and the group must put a lot of effort in engaging potential volunteers to ensure a long tenure with the organization

(Cnan & Cascio, 1999) (Smith, 1994) The determinants of volunteer participation are therefore not limited to just one factor, but a variety of factors (Smith, 1994).

Another study examined watershed volunteerism by using the Theory of Planned Behavior (Hauser, Koontz & Bruskotter, 2011).). The study indicated that to increase participation rates, groups "should personally request participation, establish an expectation of participation, and work to ensure that members have a positive attitude about their participation." (Hauser, Koontz & Bruskotter, 2011 p.15).

Research Objectives:

This case study aimed to answer the following research objectives:

1. How successful is the Friends of Big Walnut in their stated goal of protecting and helping the watershed?

2. What factors hinder the Friends of Big Walnut in their desire to have a larger presence in the watershed area?

3. How does the Friends of Big Walnut compare to other watershed groups in central Ohio?

After conducting 9 interviews, these research objectives were used to guide this case study's analysis. Although there has been much research on watershed participation and environmental collaborative management, this case study will evaluate prior research with the findings from qualitative data gathered from semi-structured interviews. Some of the issues being analyzed were group size, participation, and outreach efforts. Previous research has included all of the stakeholders in watershed management, including developers, agencies, townships, individual private citizens etc. This case study focuses more on the user monitoring

group rather than environmental management as a whole. This research is important because if local citizen groups can be more effective, it may lead to better environmental management.

Although this case study attempts to answer some ambitious questions, its pitfalls and shortcomings must be disclosed. It is often difficult to measure environmental improvements by interviewing participants due to the "Halo Effect" (Leach, Pelkey & Sabatier, 2005). For example, the "Halo Effect" can be seen when participants in a group help protect, or attempt to improve a natural resource, they may feel the psychological need to over-report the group's accomplishments, which would vindicate the group's existence and their participation in the group. The "Halo Effect" may be a limitation in this case study as the participants of a user monitoring group were interviewed and asked how they would define their group's impact on the local watershed. In addition, the information gathered from the interviews were opinion based, and therefore it is difficult to assess the accuracy of the interviews. By interviewing multiple group members and comparing perspectives, I was able to bolster data validity. The interviews were of a semi-structured format where all interviewees were asked nearly identical questions, they often responded in different and unforeseen ways. Another limitation to this case study is that only nine interviews were conducted due to the limited membership of the Friends of Big Walnut and lack of individuals who have interacted with the group. However, when creating the interviewee list, special care was taken to include interviewees from divergent backgrounds. Interviewee backgrounds varied from NGO personnel, academia, and governmental agency personnel.

Methods

This qualitative case study was completed using semi-structured interviews of various individuals that have had ties to or knowledge of the Friends of Big Walnut organization. The

group in question is a local citizen based organization (watershed group, which are important players in collaborative environmental management). The interviewees were asked a similar set of questions, but the interviewer was able to direct the conversation to certain topics if an interviewee seemed to be more knowledgeable about the said topic. Each interviewee was asked questions about the characteristics of the group, and their opinions on how the Friends of Big Walnut could improve. The general questions asked are listed on the in **Table 2**. Some interviewees were not able to answer every question due to a lack of opinion or association with the Friends of Big Walnut. If an interviewee did not want to disclose information, that was accepted without question. In addition to the information obtained from this protocol, there was information gathered from a government employee with regards to granting money to citizen based watershed groups. Since the government employee did not have a connection with the group, the interview was conducted in a conversational format in order to obtain the most relevant information possible to this study.

In total, 9 interviews were conducted for this case study. Four interviews were obtained from members of the Friends of Big Walnut with each interviewee being a board member at one time or another. Also, to contrast this group, two individuals were interviewed from two different watershed groups, the Friends of Alum Creek and Tributaries and the Friends of the Lower Olentangy Watershed. These individuals were also in leadership positions of their respective groups. Another two interviewees were conducted from researchers at Ohio State based on their prior experiences with local watershed groups, or the Friends of Big Walnut specifically. Lastly, a government agency employee was interviewed to gather information on granting governmental funds to local watershed groups such as the Friends of Big Walnut. Interviews were conducted in person, and lasted approximately 60 minutes each. Notes were carefully taken and written up,

and any follow up questions were answered via email/telephone. Interviewees were given assurances of confidentiality to encourage open and honest responses, and the research proceeded following guidelines established by The Ohio State University's Institutional Review Board for research involving human subjects.

After the interviews were completed, the interviews were analyzed to see if there were any patterns that existing research could help further explain. Next, document analysis was used to attempt to answer the research questions of the case study in combination with the information gathered from the interviews. Documents included web sites of the watershed groups and government agencies that work with the groups, as well as reports, such as the Lower Big Walnut Creek Watershed Action Plan and Inventory. To answer the first research objective, group effectiveness was evaluated based on interviewee responses, and relevant literature on what really makes a watershed group, or even collaborative environmental management effective.

The second research objective was a little bit more difficult to answer as a multitude of factors drive volunteer participation (Smith, 1994). The second objective may be the most important for the groups themselves, as each group displayed a great deal of interest in increasing participation in their organization. Based on interviews and previous experiences with group members, some conclusions were made which will be discussed more in depth later in this report.

The final research objective was examined by comparing the information gathered from the three watershed groups examined in this case study. The three groups in question were the Friends of Big Walnut, the Friends of Alum Creek and the Friends of the Lower Olentangy Watershed. Each group seemed to have a different view on what made a watershed group

effective. On top of this, the groups in question seemed to follow patterns outlined in article by Koontz and Johnson. This allowed for analysis of not only group structure, but also if the factors interviewees listed that determine if a watershed group is successful or not line up with preexisting research.

Before we begin could you please give a quick background of yourself?

1. How are decisions made in the group? Is it a collective choice or do the leaders of the group make the majority of the decisions? Please elaborate on the decision making process for your organization and your thoughts on it if it could improve.

2. How does your organization work with local communities and what are the direct benefits?

3. What are the duties/ tasks performed by your organization in terms of enforcement of preexisting environmental regulations?

4. Does your group conduct monitoring of the watershed? If so how is it carried out? Do you think it is effective?

5. Do you recruit new members to your organization? Is anyone allowed to join the group? Is there a high turnover rate within your organization and how do you keep members involved? What are the demographics of the members of your organization? Technical? Environmental? Have the members' demographics remained constant throughout the life of the organization or have they changed?

6. Do you think there has been any success in this process (your group's history as a whole)? If yes, how would you measure the success?

7. How does your organization influence governmental decisions and what is your group's relationship with government entities such as OEPA, ODNR etc, etc? Explain.

8. What do you believe is the most important factor that makes your members want to be involved in the group?

9. Do you believe non-technical members gain knowledge by being in the group or that your members learn a lot by being a part of the group?

10. Is your group financially stable and if so what compromises the majority of your funding?

11. What is your primary reason for being a part of this group? Would you be apart of the group if you did not have a vested interest in what the group is attempting to protect?

12. In what ways do you believe your group can improve/what are the main challenges facing the group?

13. Do you feel that you provide a better/comparable service than a government entity could provide (monitoring)?

14. What are your thoughts about user monitoring in other settings/situations?

15. How would you define a successful watershed group, what qualities make the group successful? Gregarious leader? Motivated membership etc…

16. What are the biggest impediments to being a successful monitoring group?

17. How would you compare (your organization) to other watershed groups? Please elaborate on the greatest similarities/differences, positives/negatives etc.

Table 2

Results

The information gathered from the interviewees varied based on a variety of factors such as the interviewee's background and group affiliation. In order to answer the research questions of this case study, each interview was examined to see how the information gathered could help isolate certain factors that influence watershed effectiveness. These points of interests, or factors, discussed in the qualitative interview process may aid future research in examining how a watershed can improve its effectiveness. Certain factors were highlighted in this section based on the frequency of their occurrence in the interview process. Although statistical analysis will not be provided in this case study, the factors that kept reoccurring will be discussed and compared with previous research literature to see if the conclusions from this case study are consistent with previous social scientific literature. The three research objectives were analyzed based on the information gathered in each interview.

Research Objective 1. *How successful was the Big Walnut in their stated goal of protecting and helping the watershed?*

The information gathered from the interviews provided an interesting analysis of the overall effectiveness of the Friends of Big Walnut and their goal of protecting the watershed. Based on the interviews in the case study, the Friends of Big Walnut have been effective in protecting the watershed for issues such as sediment control at construction sites but not necessarily in the manner that they desired as a group. Interviews with members of the group often revealed a frustration the group's message had not caught on with the greater central Ohio community. Members often attributed this lack of participation or interest, to a lack of awareness, or simply due to the fact that people do not care as much for the environment compared to other issues. For example, one interviewee disclosed, "I think from my point of

view, there is the issue that there isn't a lot of citizenry who is concerned. It's just not high on the radar on a lot of folks; it's just something they don't care too much about." (Int.1, Big Walnut)

Members of the Friends of Big Walnut also disclosed other frustrations they believed limited their effectiveness in the watershed. The other factors that kept on recurring from these interviewees were a lack of monetary support from governmental agencies, lack of a concrete recruiting plan, and the fact that environmental advocacy or confrontation was not palatable to some potential members of the group.

Financially speaking, the group was funded primarily through membership dues and a program called Earth Share which is a national non-profit organization that helps raise money for individuals or organizations dedicated to environmental causes. Although the group was financially stable, they did not have the financial resources to achieve as many of their goals. In the past they had a paid staff member, a watershed coordinator to help advance their agenda with various entities in central Ohio. This watershed coordinator was paid though a governmental grant provided by the Ohio Department of Natural Resources. (When this funding ran out, and the group could no longer afford a staff member, this limited their effectiveness in their minds and created a sense of abandonment by the agencies that helped start the group). One interviewee thought that a lack of governmental funding severely limited the group's activities and overall effectiveness, "The difference between the organizations would be the amount of money they have, the treasury, this affects the decisions, if you do not have the money to pay for what you want to do, the action, then it just limits what your abilities are as an organization." (Int.3, Big Walnut). Although some members of the Friends of Big Walnut believed they were abandoned by governmental agencies, the research does not support the conclusions. The grant that the

group was awarded was a 319 grant of the Clean Water Act. These grants are distributed based on section 319 of the Clean Water Act which states that:

> The 1987 amendments to the Clean Water Act (CWA) established the Section 319 Nonpoint Source Management Program. Section 319 addresses the need for greater federal leadership to help focus state and local nonpoint source efforts. Under Section 319, states, territories and tribes receive grant money that supports a wide variety of activities including technical assistance, financial assistance, education, training, technology transfer, demonstration projects and monitoring to assess the success of specific nonpoint source implementation projects. ("Clean water act,")

The grant awarded to the Friends of Big Walnut was part of a program created by the Ohio Department of Natural Resources with funds received from the 319 program of the Clean Water Act. The grant money was meant to be used for the creation of a watershed action plan, with the aid of a watershed coordinator, which the group completed. After this, according to an interviewee who worked for the Ohio Department of Natural Resources, funds from the 319 program were shifted to "implementation grants", which did not apply to the activities of the Friends of Big Walnut (Int. 1, Ohio DNR).

Recruitment of new members was the biggest challenge for the Friends of Big Walnut. Each member of the group recognized the groups failings in this regard, even the severity of this problem as one member noted:

> We need more members, we need more people involved with regulation, regulations, the legal, and I mean the new regulations come out. We need more people involved with monitoring, the biggest problem we have with this group in this area is development. We are not a stable watershed, the only thing that is going to happen to our watershed is to

> have it degraded and it is a relatively high quality stream now but it won't continue to be that way with all the development and all the attacks on the watershed to put in parking lots and to put in buildings. So we need more people involved in those, in the actual monitoring of those regulations and developers. We talked about young members, recharging the group with membership, so I think that's the biggest issue that the group has, is membership. (Int.2, Big Walnut)

The main issue with recruitment is that the group did not have any semblance of a recruitment strategy. Oftentimes, interviewees from the group listed some small efforts at one point in time like mailing lists or mass emails. Another common response was that the group thought that the community would readily adopt their cause, as one interviewee noted:

> I think for the most part there wasn't a membership strategy, you know there was not like this is how we are going to recruit new members, it was something that we hoped would happen so you would try to put notices in the paper when you were having a meeting or some sort of event whether you were doing an informational thing or a cleanup event you would get people's names and addresses and so you would create this mailing list and you would send information to people on the mailing list and the people would become members even if they did not come to meetings. (Int.1, Big Walnut)

Without any recruitment strategy, the group's membership has continued to dwindle as they failed to even engage citizens if they did not suit the group's specific needs. One interviewee lamented:

> And I can think of some people early on, particularly some technical people who said well gee I could help you do this I could help you with that, the difficulty was that we really didn't have a need for them to do that, there wasn't you know like oh yeah we need

> somebody to do that so they never got asked. But in retrospect I would be inclined to ask for them to do something like that even if there wasn't a direct need lets figure out something to do with that person to get them engaged in the group in a different way. (Int.1, Big Walnut)

Finally, this case study revealed that although the Friends of Big Walnut is a local user monitoring group, they are an adversarial group. They often would file notices to sue to various construction companies that were found to be in violation of the Clean Water Act. Also, the group would often bring complaints to governmental agencies such as Ohio EPA on potential violations of sediment control at construction sites. One interviewee noted , "I think there are inevitably tensions associated with that, I think that's unavoidable, I think that can be frustrating for the agencies ." (Int.1, Big Walnut) Although the group was passionate in their advocacy, some members thought that this hindered membership recruitment:

> I think when the group became more focused on advocacy or more of confronted kind of roles, it reduced the membership some or reduced the involvement because I think some people are nervousness by that or by temperament. They just, when you are challenging government agencies, that isn't everybody's cup of tea, it's one thing, gee lets learn about the fish, it's another thing to lets threaten a lawsuit. (Int.1, Big Walnut)

The factors discussed above inhibited effectiveness in the eyes of the group members were viewed quite differently from individuals who had knowledge of the Friends of Big Walnut but were not members. Oftentimes, the issues listed by the group members that hurt their overall effectiveness were seen as a positive by interviewees with no formal ties to the group. For example, one interviewee noted that:

> Thinking specifically about the Big Walnut group, they identified and in many cases they have found infractions, they have identified infractions with water policies and brought EPA in on the case and have been able to get things fixed or corrected, people have been fined as a result of their work and they have had other projects too like beautification projects so yeah I think at a very tangible grass roots level, I think they, they are effective and they help to increase awareness of the local citizens of the resource and its value. (Int.1, OSU).

This helps to paint a somewhat cloudy picture of the overall effectiveness of the Friends of Big Walnut. Internally the group believes they have not been effective, but outwardly the group is seen as successful in certain ways. They have been effective in helping identify a myriad of infractions related to sediment erosion control and other basic water infractions, but they have not achieved the community following that they desire, which would make a difference in their fight to protect the watershed of the Lower Big Walnut Creek, ensuring their group's survival.

Research Objective 2: *What factors hinder the Friends of the Big Walnut in their desire to have a larger presence in the watershed area?*

As the case study progressed it became apparent that group participation was one of the main issues facing the Friends of Big Walnut. Although the group was perplexed on how to increase participation, all of the interviewees listed similar reasons for the group's failure to gain more membership, which oftentimes aligned with their opinions on the factors that inhibited group effectiveness. It seems odd that even though there was a consensus about the problems, nothing proactive had been done to address these concerns, almost akin to paralysis by analysis. The main factors that kept reoccurring from the interviews that hindered the group's growth were

the group's confrontational nature, a lack of structured recruitment plan, and a lack of emphasis on issues that would likely engage a broader spectrum of individuals from surrounding local communities. These first two factors were discussed in detail in the previous section that dealt with group effectiveness. The group's insistence on focusing on issues such as sediment control was a huge detriment to their recruitment efforts according to some members:

> And so, with the Friends of Big Walnut there needs to be a broader range of things that people do and an effort to reach out with different kinds of folks. You know, there are different concerns in the watershed now. There are people concerned with erosion; this isn't about construction erosion, it's just about erosion on their properties and impacts of storm water log, and those people need a place to talk about their concerns and do their work. Similarly there are people who like to kayak and there are people who like to canoe and there are people who like to fish and there are people who really want to do something that would be really good for the community whether it's a cleanup or a planting or whatever. So trying to figure out who are the different constituencies and how do we expand those constituencies so that the group does not get too narrowly gauged but that you are attracting different age groups. (Int.1, Big Walnut)

This narrow focus was oftentimes listed as one of the main reasons the Friends of Big Walnut could not attract other members of the community who may have had an interest in the Lower Big Walnut Creek Watershed. Other groups however, such as the Friends of the Lower Olentangy Watershed and the Friends of Alum Creek and Tributaries often tried to engage community members on a variety of issues in their attempts to retain as many members as possible.

Research Objective 3: *How does the Friends of Big Walnut compare to other watershed groups in central Ohio?*

Two other watershed groups were examined in this case study to compare to the Friends of Big Walnut, the Friends of the Lower Olentangy Watershed (FLOW) and the Friends of Alum Creek and Tributaries (FACT). Based on the interviews with these group members, certain differences between the groups became readily apparent. FACT and FLOW both were much more active in trying to engage people, form connections with public and private entities in central Ohio, and were more focused with service and outreach rather than advocacy. These differences may have contributed to the fact that both FACT and FLOW each had a larger presence in their respective communities.

Although the Friends of Big Walnut desired to find ways to engage the communities in their watershed, little action on this endeavor was completed. The opposite is true with the other groups examined in this case study. For example, FLOW often tries to engage community members through its adopt a spot program which as one interviewee described: "in our watershed we have 25 adopt a spot groups and it's kind of informal and they commit to three cleanups a year." (Int.1, Other Watershed Groups) FLOW also reached out to the local community with award ceremonies, social gatherings, and used different sources of media to remain in contact with their members. One interviewee noted that this type of effort is difficult as: "I think keeping people engaged is the hardest part because like I said, how do we contact people, we have some people who don't like email; we have some people who don't like phone calls so how do we reach people and I think we need to go back to our public meetings or use television ads or something to just to reach out to people and remind them that they can help and to do that you sort of need people that are like minded." (Int.1, Other Watershed Groups) FACT

also was more focused on engaging community members as they often initiated clean ups, tree plantings, and other get together aimed at getting the local citizenry involved. This in turn was reflected in the groups' overall structure. Each had a diverse board that was engaged in a variety of interests which seemed to attract a larger segment of the local community.

Forming connections seemed to be the biggest concern from the interviewees of FACT and FLOW. The interviewees believed that with more connections to the public, governmental entities, and private companies, would help increase their presence in the watershed, and therefore help bolster their causes. This not only requires a lot of time, but also an outgoing personality, according to one interviewee: "I think we need someone outgoing to be in the watershed because at least one person to make those connections, I think once you have the connections, anybody can kind of take over." (Int.1, Other Watershed Groups) The connections that these groups attempted to make were from a wide range of entities from individual citizens, companies such as Anheuser Busch, and academic institutions such as The Ohio State University. Although the Friends of Big Walnut coveted these types of relationships, they did not appear to have enough engaged members to make this type of effort.

Lastly, both FACT and FLOW were not as interested in advocacy or confrontation as the Friends of Big Walnut. They were more interested in community outreach efforts and education. This may have helped them engage a broader array of the local community, since they were seen more of an educational group, rather than confrontational interest group. Also, each group's focus has continued to evolve. They have not stagnated as the issues around their watersheds have changed. One interviewee attested their moderate success to the fact that: "FLOW hasn't been stagnant, I think that is good, maybe because we are in a more educated urban environment in Clintonville, we have lots of resources, we have OSU professors, educated students that are

passionate." (Int.1, Other Watershed Groups) Although the interviewee attested part of their success to the community surrounding the watershed, the Friends of Big Walnut also has an involved community in their watershed near Gahanna Ohio. In order to reach a broader segment of their community, the Friends of Big Walnut may have to shift from a single issue group to a group that is incorporates a variety of interests in their mission to improve the watershed that they protect.

Discussion

The information gathered in this case study seemed to affirm past research on issues such as group effectiveness, watershed group characteristics, and volunteer participation. The research conducted in this qualitative case study did not seem to disprove or contradict past research either, but it did raise questions on how to improve a watershed group's overall effectiveness as increasing participation gives groups the people resources needed to achieve their best work, and to truly reach the communities that reside in their watershed.

The research from this case study indicates that the best way to improve effectiveness depends on what the group is trying to achieve. If the group wants to have a broad membership and really engage the community, confrontation and single issue platforms are not the best paths to take. They must be a multi-issue watershed group that tirelessly tries to make connections with their community.

This does not mean that a group such as the Friends of Big Walnut has not been effective. They have been effective in advocating for a single issue, sediment control, by being a constant watchdog of governmental agencies and contractors with sediment erosion control. This often can only be achieved with a very dedicated group of individuals, but often this single issue focus may alienate potential group members. The real question for this type of group is if it

would be possible to get more people involved even if it meant incorporating other interests to their group platform.

Group Characteristics and Participation

Past research has indicated that group characteristics of a watershed group often can determine the level of participation in that watershed group. The research conducted by Koontz and Johnson indicates that groups that list accomplishments such as restoration, group maintenance, and identifying and prioritizing issues, are tenants of a group filled with a diverse set of stakeholders. On the other hand, a group that prides itself on governmental pressure may have lower participation or memberships rates. (Koontz & Johnson, 2004). This type of group paradigm was also reflected in this case study. The Friends of Big Walnut has always put pressure on governmental agencies and other entities with regards to sediment and erosion control. This type of activism may have inadvertently hurt their desire for expansion as one interviewee noted: "government agencies, that isn't everybody's cup of tea, it's one thing gee lets learn about the fish, it's another thing to lets threaten a lawsuit (Int.1, Big Walnut) The opposite behavior was examined in the other two groups examined in this case study, the Friends of the Lower Olentangy Watershed (FLOW) and the Friends of Alum Creek and Tributaries (FACT). These groups both focused on broad issues such as education and outreach, and they had much more participation from a diverse array of stakeholders compared to the Friends of Big Walnut. This likely stems from the idea that a narrow group focus will likely only interests individuals that are attune to that narrow focus. (Chess, Hance & Gibson, 2000). In order to get the community involvement that they have been striving for, the Friends of Big Walnut may have to change their group focus to one that incorporates all of the diverse concerns for their watershed.

Group Effectiveness and Group Size

Although the Friends of Big Walnut is a small watershed group, this does not mean they were not effective in protecting the watershed. Increasing participation may not necessarily lead to better outcomes for the issues that the group is focused on. The key aspect is getting the right participation for the right type of issue (Chess, Hance & Gibson, 2000). This relates to the information gathered in this study because the Friends of Big Walnut were already effective at helping improve sediment and erosion control at construction sites near their watershed. As one interviewee stated, "I think the groups have made a big difference in how construction activities are carried out, at least in our part of the county. And in the end I think we wound up assisting the agencies in getting compliance, so that impact was made." (Int.1, Big Walnut). The answer to the first research objective is therefore somewhat uncertain. On one hand the group was effective in helping reduce sediment control issues at construction sites. This type of activism did not require a large scale community effort and was successful with a handful of dedicated and passionate volunteers. On the other hand however, the group did not grow as much as they would have liked or reached as many people as they would have liked. Effectiveness may then need to be redefined based on the situation a watershed group finds themselves in (Chess, Hance & Gibson, 2000).

Increasing Community Participation

Recruitment or increasing participation was often listed as the biggest failure of the Friends of Big Walnut. The group did not have a solid recruitment strategy. This type of effort unfortunately did not get the participation results that the group desired. Research indicates that recruiting new members often is a long and work intensive process that requires direct contact with potential members and making them feel as though they are a valued by the group (Cnan &

Cascio, 1999, Smith, 1994) (Duram & Brown, 1999). Although the Friend of Big Walnut wanted to engage more people, the group often did not try and get people involved if they did not possess a skill that the group needed at that time. This may have hurt the group's community outreach efforts. Other watershed group such as the Friends of Alum Creek and Tributaries seemed to prioritize making every member feel valued. As one interviewee from the Friends of Alum Creek and Tributaries disclosed, "we are trying to channel people's energy in positive ways this is what we try to do, we try to treat each person as a valued individual with some skills to bring with whatever problems are at hand and not treat one person as more equal than others." (Int.2, Other Watershed Groups))

Research also shows that social connections are more likely to increase volunteer participation rather than demographic factors (Hauser, Koontz & Bruskotter, 2011). The research of this case supports these assertions, as the Friends of Big Walnut did not really try as hard to form social connections with the local community and their recruitment efforts often were at a standstill. In contrast to this, the Friends of the Lower Olentangy Watershed and the Friends of Alum Creek and Tributaries were always looking for ways to engage local communities either through stream clean ups, earth day events, or simple social gatherings.

Conclusion

This qualitative case study sought to determine if a watershed group, the Friends of Big Walnut, located in central Ohio was successful in their mission, which was to protect and improve their local watershed. To answer this question, three research objectives were investigated to determine if the group was successful, and to further determine if there were ways in which the group could improve. As the case study progressed it became apparent that success or effectiveness was determined based on how it was defined by the watershed group. For

example, a watershed group could either focus on education and outreach efforts, or advocacy and confrontation. Both of these formats are effective in their own ways in collaborative environmental management. The group examined in this case study is a small watershed group that has been focused advocacy on and adversarial actions to reduce sedimentation at construction sites.

As this case study progressed, it became apparent that the main issue facing the group was their dwindling membership base. The group desires to find a way to increase their numbers, an endeavor in which they have not had much success. By comparing The Friends of the Big Walnut to two other watershed groups that have had some success in recruiting and engaging their local communities, some conclusions were able to be drawn from this case study that seemed to back up previous research. The Friends of the Lower Olentangy and the Friends of Alum Creek and Tributaries both had greater participation rates among local communities in central Ohio compared to the Friends of Big Walnut. The information gathered in this case study attributes this dynamic due to various factors such as: the groups (FACT and FLOW) improving social connections among a variety of entities, both public and private; a group attitude that promotes education and outreach instead of confrontation; and focusing on a diverse set of issues facing the watershed instead of just one or two.

While, the Friends of the Big Walnut has not been successful in recruiting members, they have had an impact on the watershed in terms of sediment control at construction sites. The importance of this research stems from the work that the Friends of Big Walnut already completed. To have successful collaborative environmental management, it is imperative that citizens be involved in the process. If not, only specific interest groups are represented in the

process. (Scheuler, 1996). On top of this, local citizen based groups have the potential to aid environmental management at a much lower cost (Danielsen, Burgess & Balmford, 2005 p.1.).

This sentiment was reaffirmed by one interviewee who possessed a diverse background in providing resources for watershed groups in central Ohio. The interviewee noted that these groups could potentially have a huge impact on collaborative environmental management:

> I think it has the potential (user groups participating in collaborative environmental management through either monitoring or outreach efforts) to make a significant contribution to our knowledge base about changes in various resources. There is going to be a huge population of retired folks who are still physically active and capable of contributing and participating in monitoring programs and the electronic devices and networking and things like that, and electronic monitoring devices that we might be able to get cheaper and cheaper into the hands of volunteers, it is not necessarily going to replace the agencies totally in terms of monitoring, but I think it's a lot cheaper to get a lot of volunteers out there if you have the right equipment you can gather a lot more data, and there have been studies of the quality of product, product in terms of data that volunteers produce and they show with the proper training that volunteers can come pretty close to technicians, trained technicians, in terms of the quality of data that they produce, so yeah I definitely think there is a huge potential out there. (Int.1, OSU)

Future research on this topic could address a variety of issues with regards to watershed group effectiveness and community participation in watershed groups. There has been substantial research on the factors that determine the effectiveness of a watershed group, from demographic characteristics to outreach efforts, but future studies could investigate if it would be possible to expand the membership of a watershed group without shifting their main group focus. One way

to achieve this would be through collaboration among the groups themselves. This strategy has already been attempted with the creation of the Central Ohio Watershed council ("COW" council). This idea is good in theory, but it seems as though challenges exist with regard to individual identities differing from a larger, collective identity. As one interviewee from FLOW notes: "I thought that was going to be good about the COW council, I thought we would be smarter (all watershed groups), but no one wants to give up their identity." (Int.1 Other Watershed Groups)

Also, a study could be conducted with a group such as the Friends of Big Walnut to determine which factors, already researched, have the greatest effect on membership. A researcher could work with the group to try out different strategies to increase membership that follows previous research conclusions. If the variables can be controlled, the study will provide a better insight than this case study can provide into how to increase participation in watershed groups, which in theory will help them be more effective.

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